Caribou

IN BRITISH COLUMBIA

Ecology, Conservation and Management

BRITISH COLUMBIA
Ministry of Environment, Lands and Parks

105-03366/

Conserving Caribou – both for biodiversity and the enjoyment of future generations – requires greater efforts at managing Caribou to ensure that they remain part of British Columbia's rich wildlife heritage.

INTRODUCTION

Of all members of the deer family, Caribou live in the most severe environmental conditions and occupy the most restrictive, northernmost niches in the world. In British Columbia, Caribou historically occupied about two-thirds of the province east of the Coast Mountains. With the large-scale development and settlement of the last 75 years, however, their habitats have changed and become fragmented. Because of these changes, populations have become discontinuous, sometimes isolated, and increasingly vulnerable. Conserving Caribou – both for biodiversity and the enjoyment of future generations – requires greater efforts at managing Caribou to ensure that they remain part of British Columbia's rich wildlife heritage.

TAXONOMY

Order
Artiodactyla
(Even-toed ungulates)

Family
Cervidae
(Moose, Elk, Caribou, Deer)

Genus
Rangifer

Species
tarandus

Subspecies
caribou (Woodland Caribou)

EVOLUTION AND APPEARANCE

Caribou have probably roamed the North for more than a million years, but the earliest evidence is from central Germany, about 440,000 years ago. At the height of the last North American 'Wisconsin' glaciation, caribou occupied three widely separated areas. These included a tundra belt located across the southern edge of the ice sheet that extended into the United States, the Beringia refugium in the Yukon, and the refugium in the Canadian arctic archipelago. After this period of glaciation, Caribou living south of the ice sheet followed the retreating ice north toward the Yukon and Northwest Territories. All Caribou in BC derive from that stock and belong to a single subspecies called the Woodland Caribou *(Rangifer tarandus caribou)*. Another subspecies once occupied the Queen Charlotte Islands, but became extinct, most probably in the early 1920s.

Female caribou have antlers, which is unique among females in the deer family.

Caribou are medium-sized members of the deer family, somewhere between Mule Deer and Elk in size. Woodland Caribou males typically weigh 180 to 270 kg while females usually weigh about 90 to 135 kg. Males can lose as much as a quarter of their weight during the autumn rut. During some winters, females may also lose this much weight.

The Caribou is a beautiful animal with a soft medium-brown body, although their colour pales as guard hairs break and fade during winter. In males, the head and neck are often white or greyish-white, with a mane on the underside of the neck. The tail and rump area, as well as a band around each hoof, are also whitish. Caribou have erect, spreading antlers, and males have a flattened (palmate) brow tine that points down over the forehead. Female Caribou also have antlers, which is unique among females in the deer

NORTHERN CARIBOU OCCUR IN THE MOUNTAINOUS WESTERN AND NORTHERN PARTS OF THE PROVINCE. *Mari Wood*

All three ecotypes look about the same, but they behave quite differently.

family. Female antlers are smaller than those of the male, and the timing of the growth/shed cycle is different between bulls and cows. Some females may be "bald," or antlerless.

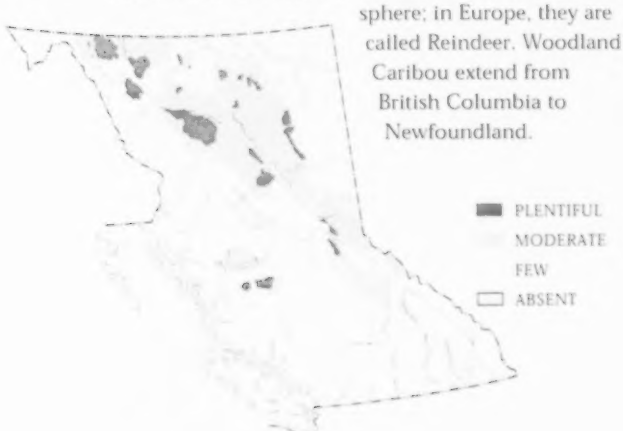
Caribou are well adapted to their environment. Their long dense winter coat provides effective insulation against low temperatures and high winds. Because of their large, crescent-shaped hooves, Caribou can search for food in snow-covered areas that would be inaccessible to deer and Moose. Caribou can also survive in these areas because they can run in deeper snow than their predators. Caribou tracks have the distinctive imprint of a dew claw, which provides additional support on snow.

HOOF PRINTS

The Woodland Caribou of BC are classified into three ecotypes – Mountain, Northern, and Boreal – which are based primarily on behaviour and the way Caribou use their habitat, including patterns of distribution and migration. All three ecotypes look about the same, but they behave quite differently. These differences in behaviour relate to the interactions among a variety of environmental conditions, including the amount and duration of snow cover, the kinds of food that are available, topography/terrain, and predation.

DISTRIBUTION AND ABUNDANCE

Caribou occur throughout the boreal and subalpine forests and tundra regions of the northern hemisphere; in Europe, they are called Reindeer. Woodland Caribou extend from British Columbia to Newfoundland.



Barren-ground Caribou occupy the far northern boreal forests and arctic tundra in Alaska, Yukon and the Northwest Territories.

In British Columbia, Woodland Caribou occur east of the Coast Mountains, from the Yukon border south to the Itcha-Ilgachuz in the Western Chilcotin, eastwards to the foothills of the northern Rocky Mountains; in the Cariboo, Selkirk, Purcell, and Monashee mountains in the southeast; and throughout the highlands and plateaus (for example, Spatsizi, Omineca) in the province's northern and central interior. Environmental changes have reduced their range in BC, especially in the central and southern half of the province.

Today, Caribou occupy about 85 percent of their historic distribution in BC while Mountain Caribou occupy about 60 percent of their historic range.

Today, Caribou occupy about 85 percent of their historic distribution in BC. Mountain Caribou occupy about 60 percent of their historic range. The effects of human activities continue to threaten some herds – particularly the international South Selkirk herd, the South Purcell herd, the Monashees herd, the Telkwa herd, the Rancheria herd, and the Southern Lakes (BC-Yukon) herd.

The number of Caribou has also decreased. BC has about 16,500 Caribou now, but there were probably at least 30,000 to 40,000 Caribou in the province at the time of European settlement.

LIFE HISTORY

The breeding season is much shorter for caribou than for other deer. The majority of the breeding occurs in a one-week period in the middle of October. Gestation averages seven to eight months, and calves are born in late May to early June. To avoid predators, pregnant females seek secluded sites in alpine and subalpine habitats. Single births are the most common, and females usually give birth to their first calf when they are three years old. Caribou calves are dark brown and have no spots. They are probably the most precocious of the deer family; calves must be up and travelling with their cows almost immediately in order to avoid predators. Even so, predators often kill more than half of the calves during the first few months. The low survival of calves is a major limitation on the increase or rehabilitation of Caribou populations.

In unhunted populations, females generally live 10 to 15 years and males 8 to 12 years. About 15 percent

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of adults die each year, on average, but the death rate can vary between almost 0 percent to 30 percent. Outside of hunting, the causes of adult mortality include predation, poaching, starvation, accidental deaths, vehicle collisions and other unknown causes.

Caribou need large areas of contiguous suitable habitat, with little or no disturbance or vehicle access, in order to spread out and avoid predators. Each group or individual searches out specific sites for feeding, cover, and other behaviours. All Caribou are social, gregarious animals. But unlike Barren-ground Caribou, the three ecotypes living in British Columbia do not form large migratory herds. Northern Caribou herds are the largest. Mountain Caribou come together only in small groups that do not migrate over great distances. Boreal Caribou form small bands that may stay in one general area throughout the year.

ECOLOGICAL RELATIONSHIPS

Mountain Caribou depend on old-growth forests, particularly for winter feeding. Because they live in areas with snow so deep they cannot dig through it, Mountain Caribou may need to eat tree lichens for up to eight months of the year. Mountain Caribou may make four migrations each year, moving down to lower elevations in early winter, back up to higher elevations in late winter, down to lower elevations again in spring, and finally back to high elevations for the summer. The range of movement up and down varies, however, and the deepest snow areas, such as Revelstoke, usually have the widest range of vertical migrations.

MOUNTAIN CARIBOU WINTER AT HIGH ELEVATIONS AND RELY ALMOST EXCLUSIVELY ON ARBOREAL LICHENS FOR FOOD. *Ian Hatter*

Northern and boreal ecotypes winter on windswept alpine slopes, in muskegs, or old, open forests at lower elevations where they can dig through shallow snow for ground lichens. The northern ecotypes generally migrate twice a year. In fall, they move down to low elevations where they over-winter before moving back up to higher elevations in late spring and summer. However, they may also move to open windswept ridges in winter to feed on exposed ground lichens. Some herds of the northern ecotype may travel considerable distances; for example, some Caribou in Tweedsmuir migrate more than 140 km in winter, from east of the Park to the Coast Mountains.

Not a lot is known about the seasonal movements of Boreal Caribou. They don't appear to form discrete herds as Northern and Mountain Caribou do. Instead, they stay in small, dispersed, relatively sedentary bands and, as far as we know, do not migrate large distances.

Caribou are primarily grazers. Through spring and early fall, they eat grasses, sedges, horsetails, a variety of flowering plants, and the leaves of willow and dwarf birch.

When Moose expand into areas occupied by Caribou, Wolf populations also increase, which increases the potential for predation on Caribou.

Because Caribou live in areas where winter is long, winter food sources are extremely important. The name "Caribou" is said to come from a Micmac word, *xalibu*, meaning pawer or scratcher, a reference to the large holes Caribou make in the snow as they forage for food. This digging behaviour, "cratering," helps Caribou to live in snowy regions.

Without question, lichen are the most important food source for all Woodland Caribou. In winter, the northern ecotype feeds primarily on ground lichens, either in high-elevation alpine or low-elevation old pine stands. In the alpine, Caribou forage on exposed terrain where the snow is hard, but relatively shallow. At low elevations, Caribou have to crater through snow that is usually soft but deeper. Once the snowpack builds up sufficient height and surface strength, the Mountain Caribou depends heavily on lichens such as witch's hair and old man's beard that grow in old trees. Mountain Caribou also search out wind-thrown trees and fallen branches in order to graze on these lichens.

Wolves are generally the principal predators of Caribou, although Grizzly Bears and Cougars may also be significant sources of predation in some herds. When Moose expand into areas occupied by Caribou, Wolf populations also increase, which increases the potential for predation on Caribou. This may explain the loss in numbers of Caribou, as well as their reduced distribution. Wolf predation is believed to be the principal factor in the decline of Caribou in

central BC. Industrial development (logging, mining and oil exploration, road-building) also threatens Caribou, not only because development reduces their principal food sources – ground and tree lichens – but also because Moose move in to take advantage of new vegetation on disturbed land, and this allows Wolf populations to increase. In southern areas, a similar predator-prey system exists with deer, Elk, Cougar, and Mountain Caribou.

VALUES AND USES

Caribou aren't easy to find, although Mountain Caribou are often visible near Kootenay Pass on Highway 3 in the South Selkirks. Backcountry users of Wells Gray Provincial Park may also see Caribou. Northern Caribou may be seen in Itcha Ilgachuz, Tweedsmuir, Spatsizi Plateau Wilderness, and Mt. Edziza provincial parks.

Snowmobiling is a popular recreational activity that can promote use and appreciation of wilderness areas, but in Caribou range, snowmobiles are cause for concern. Caribou may be able to tolerate low levels of snowmobile use, but harassment by high levels of unregulated snowmobile activity can cause them to leave the winter habitats they prefer and may ultimately lead to higher death rates and declines in Caribou populations.

Most northern First Nations hunt Caribou for meat, but not during the rutting season because of the strong taste the meat acquires at that time. Caribou hide is one of the warmest hides available because of its high insulative quality. Besides using Caribou hides for clothing, First Nations also used tanned hides to make containers for storage and transportation. They sometimes used sinews as thread for sewing and as twine, and made snares with strands of Caribou hide. Caribou antlers and some bones were used to make arrow points, knives, scrapers, digging sticks, and tool handles.

British Columbia contains almost all the world's populations of Mountain Caribou, an ecotype which is presently Blue-listed in BC.

Caribou cannot tolerate the same high levels of hunting as other members of the deer family. Migratory habits, dependence on critical seasonal habitats, low survival of calves, and the vulnerability of mature bulls to hunting during the rutting season make greater restrictions on hunting more important for caribou than for Moose, Elk, and deer. In the past, the combination of liberal hunting regulations and predation resulted in declining Caribou populations. Today, management goals include restoring and maintaining appropriate sex and age ratios, monitoring population levels, and compulsory inspection of all hunted caribou. The mountain ecotype is currently not hunted.

NORTHERN AND BOREAL CARIBOU TYPICALLY WINTER IN EITHER MATURE LOW ELEVATION LODGEPOLE PINE OR BLACK SPRUCE FORESTS WHERE THEY FEED PRIMARILY ON TERRESTRIAL LICHEN. *Mari Wood*

CONSERVATION CONCERNS

British Columbia contains almost all the world's population of Mountain Caribou, an ecotype that is Blue-listed in BC, which means that it is presently considered sensitive or vulnerable, and therefore at risk. The Mountain Caribou ecotype has been proposed as a candidate for the Red-list (meaning it is threatened or endangered). Boreal Caribou have been proposed for Blue-listing. The total number of Mountain Caribou in BC today is estimated at about 2500 and the number of Boreal Caribou at about 725.

Herds of British Columbia Northern Caribou are considered vulnerable in some locations within the central interior, where they have been singled out for special management attention through individual forestry and local and regional resource management plans (for example, Itcha-Ilgachuz-Rainbow, Tweedsmuir-Entiako, Telkwa). Northern Caribou are Yellow-listed, which means they are not at risk, but conservation is still a concern.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has

designated western populations of Woodland Caribou in Canada as vulnerable.

The principal management concerns for Caribou include the following:

- loss of food supply and shelter habitat, especially in winter;
- fragmentation of habitat;
- human access, which causes increased disturbance and makes Caribou more vulnerable to illegal activities and predation;
- changes in prey/predator relationships.

Caribou appear to be most vulnerable to predation if their habitat has become fragmented by fires, logging, access roads, and other developments. Fires and logging also create habitats that attract other ungulates into Caribou range, which in turn increases the number of predators. Human access increases the potential for disturbance. Ploughed roads and skidoo and other trails may make it easier for Wolves to enter Caribou habitat.

Wildlife managers stress that planning for BC's Caribou must:

- maintain suitable lichen-producing winter ranges;
- minimise habitat fragmentation within Caribou range;
- manage human access and regulate hunting;
- manage habitat to keep predators away from Caribou.

Because even minor environmental differences may influence Caribou's response to management practices, forest and wildlife managers need site-specific information that will help them determine which management strategies are appropriate for particular Caribou ecosystems and Caribou ecotypes.

FOR MORE INFORMATION

Additional information about Caribou can be obtained from Ministry of Environment, Lands and Parks regional offices, government agents, or by contacting Wildlife Branch Headquarters at PO Box 9374, Stn Prov Gov, Victoria BC V8W 9M4, 250-387-9717, or through your local Enquiry BC phone number.

"I CLIMB THE HILL, SEEK THE CARIBOU, TO FEEL THAT I BELONG TO THE EARTH AND SKY, AND AM NOT A CREATURE APART." — TOM BERGERUD, 1978
Art Twomey

BROCHURE FUNDING PROVIDED BY

HABITAT CONSERVATION TRUST FUND

This project was funded by the Habitat Conservation Trust Fund that was created by an act of the legislature to preserve, restore, enhance and acquire key areas of habitat for fish and wildlife throughout British Columbia. Hunters, anglers, trappers and guides contribute to the Trust Fund enhancement projects through license surcharges. Tax deductible donations to assist in the work of the Trust Fund are welcomed.

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ORIGINAL TEXT: MAGGIE PAQUET/MAIA PUBLISHING
ARTWORK: MICHAEL HAMES
DESIGN: ARIFIN GRAHAM, ALARIS DESIGN
DISTRIBUTION MAPS: ADAPTED FROM RBCM HANDBOOK BY ALARIS DESIGN

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MELP 973748.0300